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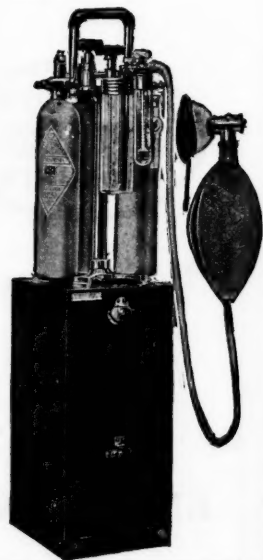
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ORIGINAL ARTICLES

INTRODUCTORY REMARKS.*

JOHN J. BAXTER
WOONSOCKET, R. I.

REMINISCENCES OF SURGERY FOR LAST 36 YEARS OF MY PROFESSIONAL LIFE IN WOONSOCKET.

We all should be thankful to have lived and seen the marvelous advances made in both surgery and internal medicine as well in the last 35 years.

In looking back to the year 1885, my graduating year, I well remember one of the questions we were asked was, Describe the five different kinds of pus found in operative wounds, from laudable pus to virulent pus. Just ponder for a moment. The mental irritation and fear that the best surgeons of that time must have felt with this ghost of laudable pus if not one of the more virulent kind appearing in their wounds for operations that were accurately and technically done in a most skillful manner, because it must be said that these old surgeons were splendid anatomists and particularly dexterous in the use of surgical instruments.

With the coming of the great Sir Lister of England, who applied the germ theory of the great French savant, Pasteur, to the science of surgery, the antiseptic era of surgery was born.

Antiseptic surgery proved the death-knell of laudable pus and gave to surgeons a confidence and certainty of clean wounds following operations, that was never felt before in the field of surgery.

To show the natural law of necessity is the mother of invention, these older surgeons in the pre-antiseptic days, in order to prevent laudable pus destroying their wound healing, used to drain most all of their large and deep wounds. It would seem queer, at least to the younger generation of surgeons, to attend an operation when antiseptic surgery was first brought about.

Everything that was used at an operation was soaked in hot carbolic acid solution, sheets, towels, swabs, gauze dressings, instruments, in fact, everything that in anyway came in contact with patient was soaked in an antiseptic. Your patient was literally done up in a wet pack, and to make antiseptic doubly sure, the air of the operating room was filled with carbolized steam, to kill the germs floating in the air.

The surgeon's hands were scrubbed with soap and hot water, then immersed in either bichloride of mercury 1-1000 or carbolic acid 2% solution, the skin of the patient was scrubbed and antiseptically cleansed, same as the surgeon's hands, the wound was dusted with iodoform. Iodoform dressings with plain gauze on top.

As time went on, reports of deaths occasionally laid to the door of carbolic acid poisoning were reported.

This caused the omitting of carbolic spray, which was supposed to be the cause. Then about this time another English surgeon, Dr. Lawson Tait, began to report cases where no antiseptics were used and his mortality rate was the lowest of the time. Like all geniuses, he was scoffed at and almost ridiculed for his heresy in disbelieving the necessity of the antiseptic regime. At that, he did what is now well known as aseptic surgery. It is told of him that at an annual meeting of continental surgeons of Europe, some of the German surgeons, in the discussion of his paper or report of 1,000 laparotomies done under aseptic instead of antiseptic preparation, asked how he obtained such splendid results without antiseptics being used and in his blunt English way he told them he obtained his results by keeping his fingernails clean.

During my student days and the earlier years of my practice, most all the surgeons in this State were trained and operated in the old pre-antiseptic days. As a trend of the times, I will relate a concrete example of an operation done during the first year of my entrance into the professional life of Woonsocket.

I attended the wife of a local dentist, who suffered from a growth of the right breast, of prob-

* Read before the quarterly meeting of the R. I. Medical Society at Woonsocket September 7th, 1922.

ably a malignant nature. As in those days, our late lamented Dr. Hils was the only local surgeon big enough to be considered, but the family wanted a bigger surgeon, so an eminent surgeon from Providence was engaged for the removal of the right mammary gland.

DESCRIPTION OF PRE-ANTISEPTIC DAY OPERATION.

Upon the morning of the operation everything was made ready. The dentist's office was made up into an operating room. Upon the arrival of the Providence surgeon, I noticed that he carried only a small, ordinary handbag and wondered where all his instruments, dressings, etc., were. I soon found out; after removing his coat and vest and rolling his sleeves, he went into the kitchen and brought forth the ordinary kitchen basin, filled with warm water. He brought forth a bottle of carbolic acid and dropped in about one-half teaspoonful from the bottle. He next dove into his bag and brought out a paper bundle full of tow. I found out that this, too, was to be his sheet anchor against laudable pus destroying his wound. Next he brought forth a pocket case which most all surgeons used in these days for emergency surgery. His scalpel was one of the old bone-handled, doubled-bladed knives which gave you a choice of two sizes, a few artery clamps, and scissors, and finally he took from the pocket of the case his needles and silk thread.

After threading his needles with silk, he dumped all into this probably $\frac{1}{4}\%$ carbolic solution, then went to work. No shaving of axilla or skin of breast, no soap and water, no antiseptic solutions used.

After enucleating the diseased mammary gland, he filled the gutter left by its removal with this bundle of tow, then closed the wound with silk ligatures, a layer or two of gauze, which was banded on. In about two days the patient's temperature reached 102° , at the fourth or fifth day was over 104° and my patient was in the throes of a severe septicaemia, the wound literally oozed pus. The stitches were removed, also the bundle of tow, the patient made an heroic fight and after three weeks made a recovery with an adherent ugly scar.

I also assisted Dr. J. P. Hils a number of

times, in breast cases. He did what might be called a modified antiseptic. He did not boil his instruments, but he thoroughly cleansed the wound and his hands, as well as his fingernails. After closing the wound, he would flush it with hot carbolic solution, putting in the nozzle between the stitches.

EARLY STRUGGLES FOR SURGICAL RECOGNITION.

Five years after my beginning practice here, the Woonsocket Hospital was built. This proved to be a great step in advance of the old regime. A hospital staff was appointed, consisting of six men, including Drs. Geo. H. Jenckes, Stillman, Paine, Monroe, Hils and myself. We each served two months apiece and attended both medical and surgical cases.

For a number of years this programme was kept up. The old operating room was then where the diet kitchen is now.

In those years of the long ago, all the major abdominal surgery was performed by outside surgeons, usually from Providence or Boston. Once in a while I might get a chance as second assistant. Even this chance was rare. As the years rolled by, this same local condition existed until finally, to me, at least, it became irksome. I used all my persuasive powers to try and coax Dr. Hils to assume the responsibility of doing major abdominal surgery, but he declined, and as all the other members of the staff were either too old for heavy surgery or were not surgically inclined, I found myself was to be the original major abdominal surgeon of the city or wait until sometime a man might settle here who would do so.

I determined in my own mind to make the try, because I clearly saw these imported surgeons came here, got all the glory, and to me, what was worse than that, they got away with all the swag and hence if it was in me I determined to block it. My next move was to go to New York City a number of times and brush up in the post-graduate schools and take night cadaver classes in major abdominal surgery. I came back to my work full of enthusiasm and a youthful conceit and confidence that the public and doctors, in particular, would be convinced that I had arrived. But lo! I arrived here all right, but not as a surgeon of the major class.

I soon saw the futility of trying to interest the older members of the staff, so I turned to the younger members of the profession for help and in this I was temporarily successful. My first opportunity to perform an abdominal operation came through Dr. William F. Barry. The doctor was called to case of ruptured ectopic gestation. His patient was in collapse with cold, clammy skin and thready pulse. He called me in council. We both decided that active hemorrhage was going on in his patient's abdomen. We also decided that it would take so long for an outside surgeon to get here that immediate operation was the safest and as Dr. Barry was willing to trust me, we telephoned Miss Slade, the hospital matron, for permission to operate. She consented. The patient was brought to the hospital. At operation an active bleeding ruptured ectopian in the right hand ligament was found. The sack was clamped off and amputated, the abdomen quickly closed and active stimulation begun. She made a good recovery, for which I gratefully thanked the Lord. One or two other laparotomies soon followed, the younger men assisting me.

Of course, it must be remembered these younger doctors were not members of the staff and of course I was breaking the rules, operating with non-members. So they soon put a stop to my aggressiveness by appointing Dr. Henry Rolfe Brown of Providence the abdominal surgeon of the hospital and for a few years he held sway and I was forced to do my operating in houses, and this I did, for I was determined to die hard. During this time I discovered that the three French doctors, old Dr. Gideon Archambault, J. P. C. Marander and Dr. Joseph Boucher, confreres of Dr. Joseph Hils, were very much inclined to sympathize with me and they really kept me fairly busy doing their surgery for them and it was pay surgery at that. As I look back in the years of these scenes, I thought at the time I certainly was some surgeon to attract the attention and support of these men, but now, as an old man, I see it more clearly; they gave me their surgery to do so as to make Dr. Hils feel piqued, for they all disliked him personally and were glad of an opportunity to show it. So another of my youthful conceits, like *Æsop's* frog, was busted.

As hope springs eternal in the human breast, the younger medical men, together with myself,

kept the candle of hope burning strongly, for they were as anxious to be recognized as members of the staff as I was for recognition as a surgeon, as a sidelight showing the feelings we had toward each side.

I conceived the idea that if I went to Dr. Geo. N. Jenckes' friends and besought their help, I might cause a change in his feelings towards me. So I would go with a pitying tale of how cruel I was used and I must have almost cried with emotion, until one day the old doctor met me after being harassed by one of his friends. It was at a hospital meeting. He said, "Look ahere, Baxter, if you are going to fight, for God's sake be a man and fight like one. Don't go around to my friends and cry and blubber to them to get sympathy for yourself."

It was not long after this that Dr. Rolfe Brown resigned as abdominal surgeon, and the trustees appointed Dr. A. M. Weeden and myself as full surgeons, and the younger men were appointed as medical men on the visiting staff.

Since that time the surgical staff has been increased to four visiting surgeons, with four assisting surgeons and others crowding in for recognition, also a very excellent nurses' training school under the direction of the matron, Miss Lucy Ayers.

Before closing, I wish to say a few words in regard to the Woonsocket Hospital.

Whatever our personal feelings may be, or our likes and dislikes, the stern fact remains that we all owe a great deal to the hospital, especially the younger, striving surgeons and the younger physicians as well, if they are awake to take advantage of the opportunities that a hospital gives them. I feel confident that local surgery, at least, could not have progressed in such a splendid manner if it were not for the fact that we had a hospital back of us.

I wish to make an appeal to those young, sterling, aggressive surgeons and medical men also, who are to take the places of us older fellows that have reached the sear and the yellow and in a few years more will have been called to their reward in another world. That they will show a broader spirit of brotherly love towards each other than their confreres who have gone before. By brotherly love I don't mean making molly-coddles out of yourselves, but just honest-to-God, good fel-

lows, for it is my honest belief that before many years the incoming men who enter this grand old, old profession of ours will be forced through the law of self-preservation to stand up for each other, for each one will find after his long, tedious 10 years of hard drudgery, in his academic course of four years, his medical course of four years more and two years in hospital training from pus bug to house surgical and medical, when he leaves the hospital full of enthusiasm and wonders whether his right hand will stand for all the shaking it will have to endure, he will probably wake up to the fact that his right hand is still cool and that the world surrounding him is cooler still, particularly when he finds he is as a young struggling medical man up against college clinics, hospital clinics, out-patient clinics, tubercular clinics, urological clinics, good and welfare clinics, mill clinics and group clinics and the Lord knows how many more there are to come.

There will be moments when he certainly will wonder where he comes in as far as getting any private patients to help him pay his board and office rent is concerned.

It is also my belief that this lack of brotherly feeling among ourselves is a potent cause of why that vast army of chronic sufferers who come to us pay us our fees and then leave dissatisfied and go to those outside cults for relief, giving them praise, glory and fat fees. I have often wondered why this is so. As all of you know, the majority of this large class of chronic neurasthenics, chronic neurotics, myalgias, dyspeptics, et cetera, et cetera, come to us first. Reading an article in Collier's Weekly lately, I thought I discovered one of the reasons why this is so. The writer very vividly describes his going to a chiropractor. After grotesquely describing the stunts he put him through, such as jumping over chairs and tables, finally putting him upon a table and pounding him good and plenty, he leaves and, as he says, takes to his bed and stays there four days. It required four days in bed for him to recover from the treatment he received. He wound up the article by saying, I paid the doctor his fee because I thought he earned it. Now, gentlemen, to my mind, that is the layman's psychology. He paid him his fee because he thought he earned it, and they leave us because they think we at least do not understand their sufferings, which to them is as

real as if they suffered from some acute illness that could be relieved either by therapeutic measures or self-limitation.

Recently one of our own essayists had the nerve and pluck to tell his medical audience that the majority of medical men were too lazy mentally to grasp the right attitude or to take the necessary time to delve in our own medical literature and find therapeutic means to relieve this class of chronic sufferers with their vague pathologies. Be that as it may, I contend that we must do something more than patiently listen to the recital of their sad tales of suffering, write a prescription and give perfunctory advice. It would be far better for us to try and understand their psychology as regards their own suffering and patiently delve into our own medical literature for therapeutic means for their relief and by so doing prevent a goodly proportion of them from seeking relief in these outside cults, and by so doing we might prove to these outside medical make-believes that we were not only well trained in the science and art of the practice of medicine and surgery but that we were also well trained in the science and art of the weaknesses of human nature.

THE PROBLEMS OF THE HEALTH OFFICER.

BY CHARLES V. CHAPIN, M.D.

Superintendent of Health, Providence.

It is easy to accede to the Editor's request for an article on this subject, for the problems are endless. There is more to learn than has been learned. There is more to do than has been done. Every year the field of public health widens and the problems increase.

The most serious problems to be met are the fundamental ones; those concerning the cause of disease and its prevention. For preventive medicine, or, indeed, for any branch of medicine, to be successful, it must have a scientific basis. To separate the wheat from the chaff is by no means easy. Few medical men, and few health officers, have had a scientific training. They often seek for what they want, rather than for the truth, and thus the judgment is biased and logic forgotten. Since the social worker and the publicity man have made themselves the connecting links be-

tween scientific medicine and the public, the danger of false steps has become greater.

So much has been learned about the infectious diseases that we sometimes forget how much is still unknown. The causative germs of so many diseases have been discovered that we are apt to forget that we still are entirely ignorant about those of many of our most common infections. We do not yet know the germs of scarlet fever, measles, smallpox, chicken-pox, rubella, poliomyelitis, and most important of all, influenza. We cannot classify colds, or sore throats, and know very little about the germs which cause them. We know very little about the causative agents of diarrheal diseases, except the dysentery organisms.

It is true enough that it is sometimes possible, as in the case of yellow fever, to control a disease though we do not know the germ which causes it. It is nevertheless true that the discovery of a specific germ is a great help, for if it does nothing more, it usually renders diagnosis possible, and without diagnosis little can be done. The easy determination of its germ is likely to expand our knowledge of any disease.

The exact knowledge of the manner of spread of contagious disease is often of as much practical value as the knowledge of the germ which causes it. The greatest triumph of medicine has been the control of the insect-borne diseases, yellow fever, malaria, typhus fever, remittent fever, sleeping sickness and plague, and for some of these diseases the mode of transmission was determined, and effective methods of control devised, before the causative germ was discovered. Conversely, we may know a great deal about the mode of transmission and also about the germ without being able to devise any effective means of control, as witness gonorrhea and syphilis.

The great problem of the present time is the control of what have come to be called the respiratory, or sputum-borne, diseases. These diseases are not always respiratory, or always sputum-borne, but the infection is found in the secretions of the mouth and nose and they are all suspected to be spread in much the same way. They are our commonest diseases. Vaughan, in his monumental work on the infectious diseases, now in course of publication, includes in this group colds, pneumonias, measles, rubella, smallpox, chicken-pox,

diphtheria, scarlet fever, mumps, whooping cough, influenza, tuberculosis, leprosy, epidemic meningitis, poliomyelitis and glanders. He might have added tonsillar infections. The Great War emphasized what many of us had felt for some time, that comparatively little progress has been made in the prevention of the spread of these diseases. We can prevent smallpox by vaccination, can cure diphtheria and meningitis with serum and by healthful living can prevent the translation of tuberculous infection into tuberculous disease. We can, perhaps, reduce the virulence of some diseases, but we are far, very far, from stamping out these diseases by preventing their spread.

We have learned much about the modes of infection in the "respiratory" diseases, but we need to have much more accurate information about the relative importance of contact and droplet infection, the sterilization of eating utensils and the utility of cleanliness in daily life. Most of all, we need to devise more effective methods of control. Not that more rigorous methods, or more strict isolation, is needed. I believe that it is quite otherwise and that more effective control of infection could be secured with considerable letting down of present day restrictions, provided a more constant and therefore more effective official supervision could be maintained.

What shall be our attitude towards pneumonia may be cited as an example of a contagious disease problem. Many, high in authority, urge that it be made a reportable disease and it is in many States and cities. What for? Is it that it may be studied? What State or city has made, or proposes, a serious epidemiological study, though it is needed badly enough? Is it to prevent its spread? Pneumonia is surely a contagious disease, but what evidence is there that there will be any less if we placard and keep the contacts in the house and make attendants wear a gown? Is it possible to control contacts and carriers of the pneumonia germs?

Influenza is a colossal problem in itself. We do not even know what influenza is. Some think the great outbreak of 1918 was not influenza. Some think that the mild outbreak of last winter was not. It is surely a contagious disease, but efforts to transmit it from one human being to another have been futile. Some think Pfeiffer's bacillus is

its cause, others do not. The best observers agree fairly well that none of the measures adopted for its control had any appreciable effect.

Tuberculosis has a whole circle of problems all its own. The deaths from this disease have shown a marvelous decrease. What are the causes and what are their relative importance? Are most infections acquired in early life? Is it worth while to try to prevent infection, or is it hopeless, at present, so that nothing remains but to prevent its activation. Are hospitals and sanatoriums worth their cost? Are routine physical examinations to be the chief reliance of the future, and if so, how are they to be brought about? Is nutritional work in the schools the best way to prevent the disease?

Another great problem is to determine the field of State or communal medicine. It was formerly assumed, and many today firmly believe, that the State should concern itself with contagious diseases only and strive, chiefly through its police power, to restrict the spread of infection and to control the environment by means of water-works, sewers, housing reforms, food control and the like. Gradually it has come to be believed that there is no logic in confining community effort to the contagious diseases, or to police control. It is just as useful to prevent heart disease as influenza. It is more effective to vaccinate and give antitoxin than it is to clean back yards and inspect plumbing. For my own part, I am convinced that anything is legitimate public health work which the State, or city, or any group of citizens, can do better to prevent sickness and death than private physicians can do, or are likely to do if they can. For me, that part of the problem is solved. Anything that the members of the medical profession, as it is now constituted, can do better than the State, should be let alone by the State. Anything that the State, or a group of citizens, can do better, they should do, no matter whether it is preventative or curative. The real problem is to decide in any individual case.

Should a city health department administer diphtheria antitoxin to the poor? I am sure many lives can be saved by so doing and so it is a proper municipal function, no matter if it is curative medicine. Is it for the best interests of the children to leave the after care of poliomyelitis to individual initiative, or should community effort be directed, as it has been in some cities and States, to securing

the very best medical supervision and seeing that treatment is persisted in? That, too, I am sure about. Is it wise to leave the removal of tonsils and adenoids to the undirected judgment of parents, or should every effort be made to induce parents to submit their children to operation? If it is true, as some allege, that removal of infected tonsils and adenoids increases the growth of children four-fold, prevents the acquirement of infectious diseases, saves the child from deafness, advances it in its studies, cures the carrier state and prevents arthritis and heart disease, and if it is true, as some allege, that half of our children have such tonsils then free tonsil clinics should be maintained by the city, or by private philanthropy and the most strenuous efforts should be made to induce attendance. For me, the real problem is whether these allegations are true. I am by no means certain.

Notwithstanding the formidable problems relating to the contagious diseases still to be solved, great things have been accomplished. These diseases are far less prevalent than formerly. It is very different with cancer and the cardio-vascular-renal diseases. We are urged by many to attack these diseases of advancing years. Of the causes we are profoundly ignorant, but something may possibly be accomplished by teaching the prompt treatment of cancer and there is reason to believe that special clinics for cardiac disease would accomplish as much in teaching right ways of living as special tuberculosis clinics have done to help the consumptive to better habits of life, but there are enormous problems yet to be solved in connection with the causation of these diseases.

Human beings are prone to be over-enthusiastic about anything in which they have come to take special interest. They lose the sense of perspective. Fresh air is good, but it is a real problem whether faith in its efficacy is not carried to an extreme. Enthusiasts tell us that open window school rooms increase the growth and the mental efficiency twenty-five or even fifty per cent. Such persons would make all school rooms open air rooms. A recent article alleges that the teeth are a great source of disease and their proper care in children results in mental and physical improvement equal to that claimed by the advocates of the universal use of the open air room. As was referred to above, the enemies of tonsillar and ade-

noid tissue claim that its removal, when indicated, increases the growth of children four-fold. Others believe that the chief hindrance to the growth of the child is faulty diet and lack of sleep and the nutritional clinic is advocated as a panacea. Still another and older cure-all is having a recrudescence, and the importance of posture looms exceedingly large in the minds of a certain group of medical men. Who shall place all this in its true perspective?

It is truly said that sanitary instruction is more important than sanitary legislation. The problem is what to teach and who shall teach it? At present the latest fad is preached the most, and the professional advertiser is doing a good deal of the preaching. I am old-fashioned enough to believe that we should teach only the truth. How can we teach people to see that medicine is a real science, though an imperfect one? It certainly is a hard job when there are so many unscientific doctors. How can we undo the teaching of ten thousand years that medicine is half magic? If we could eliminate a lingering faith in the supernatural, most of the cults would never see the light of day. How can we correct the careless mistakes of the last generation and lead the public to understand that preventive medicine is more than scavenging? How can people be taught that it is more important, for health's sake, to keep the fingers out of the mouth, than it is to report a neighbor's ash heap to the health department? How teach the plumber that it is better to install a lavatory such as surgeons use, so that the hands can be washed clean, than it is to line the bathroom with marble slabs? How can mothers be taught that fresh air is better for their girls than French, and milk is better for their boys than movies?

Then there is the problem of the mid-wife. The education of some midwives and the elimination of others, has reduced the number of our midwives thirty per cent. It has been said that a good midwife is better than a poor doctor and very likely that is so, but what is needed is more good doctors.

Another problem is the nostrum evil, and it is a great evil, but fortunately not so great as it was. Few municipal, or State, health officers have ven-

tured to attack it, though some, like Dowling of Louisiana, have waged a valiant fight. The A. M. A. has done wonders and nurses and social workers have carried the message to myriads of homes. Education, of course, is the effective weapon, education, persistent, insistent, aggressive, tactful and truthful. It is necessary not only to show the worthlessness of nostrums, but the worth of modern medicine must be contrasted with the dangers of self dosing with patent medicines. This sort of education, too, is the greatest weapon against the "cults." The popular medical column of the daily press has a wonderful opportunity. The problem is to make good use of it.

Doubtless the greatest health problem of all is the physician. If every physician was like the best, like those hardworking, conscientious, progressive men of sound judgment, who are the leaders of the profession in every community, there would be no such problem. There are many who are quite otherwise. If nostrums and crazy cults were banished, matters would not be so very much bettered, unless all doctors were good doctors. If every physician would give every expectant mother the best of care, would apply the Chinese custom to the babies, keeping them well, rather than curing them, would vaccinate every child against smallpox and diphtheria, would consider every sore throat serious until proved otherwise, would use diphtheria antitoxin as it should be used, would suspect tuberculosis when it should be suspected, would really cure his syphilis cases, would apply the most approved treatment to his poliomyelitis, would see to the removal of infected lymphoid tissue, the health department would not have to worry about the establishment of prenatal clinics and well baby consultations, of nutrition classes, or of Tb. or V. D. or polio, or adenoid clinics and the department could discharge most of its nurses and doctors.

There is another problem, perhaps the most disheartening, which fortunately has not worried me much, but which not a few health officers outside of Providence have to face, and that is the apathy, or dictation of self-seeking politicians. I see no solution for this problem.

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EDITORIALS

OLD AGE AND BLOOD PRESSURE.

As we multiply our instruments of precision and with them the accuracy of our clinical observations, the seeming simplicity of our problems disappears and we apprehend with growing experience the enormous complexity of living organisms. Take any problem you please—immunity, anaphylaxis, metabolism, endocrinology—and at-

tempt to establish a rule of universal validity and you fail, for the good reason that each individual is a law to himself and in his, so to say, biological waywardness, refuses to be confined within any rigid formula. Human nature is gothic, not classic, and even in old age men insist on being various: as in their integrations, so in their disintegrations, they belie our prophecies.

Formerly we believed that with advancing years we may look for an increment of blood pressures, but now we know that such is not the truth, as a recent interesting article in *The Lancet*¹ informs us, thus confirming our suspicions. Imbued with

¹ Old Age and Blood Pressure Problems. Thompson and Todd. London *Lancet*, Sept. 2, 1922.

the current teaching, the authors were soon puzzled by the paradoxical readings in men over 75 years of age whose radial arteries were nodular "pipe-stems," one patient showing a pressure of 195/100, another apparently parallel, 140/75; a third 115/70. They then took readings of 102 pensioners, all from 75 to 92 years of age, with interesting but inconstant results.

Up to and including middle age, the heart, in the absence of obvious endo- and myocardial disease, may be accepted as a constant factor, as may the arteries in the absence of appreciable sclerotic change. Under such circumstances it has been possible to formulate a standard or "normal" of pressures taken from many thousands of individuals. But on the other hand, it is impossible to set up a normal for a degenerated heart, the action of which cannot be guaranteed from hour to hour, nor, indeed, from minute to minute. General or localized arterial disease again precludes the possibility of supposing a standard applicable to old people. While it is not suggested that every man over 80 years of age has a degenerated heart or established disease of the arteries, it may be presumed that after so many years of constant use they are the worse for wear, and from post-mortem observations the authors believe that the large majority of old people have deteriorated cardiovascular systems. Furthermore, of the nervous, chemical, toxic and mechanical factors regulating and modifying the caliber of the blood vessels and the rate of flow of the blood we *know* nothing, though of course we are fertile, perhaps too fertile, in surmises, hypotheses and opinions.

Plotting out a graph, the authors show that 54 out of 102 men showed a systolic pressure of 130 to 169, while 31 of these 54, that is, the majority, exhibited pressures of 130 to 149. An undoubted majority, 54 out of 102 cases, showed diastolic pressures of 50 to 89. But to apply these figures as "normals" for this period of life is plainly impossible when one is faced by the active die-hards with signs of neither hypo- nor hypertension and no apparent answer to the puzzle that their pressure readings vary from 190/100 to 95/45. Categorically to deny, as some do, that blood pressure having attained a certain level can change to a lower level and be still compatible with the individual's well-being, is to discredit the adaptation

of which the system is known to be capable, and of which further evidence is continually forthcoming as scientific research proceeds.

There are many clinical findings for which no satisfactory explanation is extant. Take the kidney as an example. Granted that signs of disease may not be demonstrable until a large portion of the kidney is out of action, at what stage in the disorganization of renal tissue does the kidney take a part in the production of high pressures? And to what extent do the conditions grouped under the rubric of nephritis come into the hyperpiesia picture? It seems generally agreed that the "red granular" kidney and the "arterio-sclerotic" kidney are histologically the same, so far as the vascular elements are concerned; and yet, although the authors see many arterio-sclerotic kidneys among their old men, they do not see the syndrome associated with the red granular kidney. It seems a reasonable suggestion that the more early fatal red granular kidney may be a condition, toxic in nature, primarily renal in origin, which works back along the arterial system to the heart; while the arterio-sclerotic kidney may result from primary hypertension operating centrifugally from the heart. But it is certain that whatever the starting point, whatever the specific difference in the effects between these differently named but similar conditions, an adaptation compatible with extended life can be arrived at between the weakened but still brave heart and the damped-down furnace of old-age metabolism.

The net result of these observations is that in old people, blood pressure readings are of more theoretical than practical interest in diagnosis or treatment. A man over 80 years of age, with no subjective or objective signs, whose organism has become adapted to a 200/100 pressure, is not a case of hypertension to be dosed with nitrites and iodides, to be rigidly dieted, and subjected to various forms of mechano- and balneo-therapy.

Finally, his or her blood pressure is not a subject to be discussed with the patient. If worry and anxiety are bad for the patient (and who will deny it?) then to give him the occasion to brood over the fact that he is "suffering from high blood pressure" is to embitter his life without doing him a particle of good.

THE CONTROL OF DIPHTHERIA.

When antitoxin was first introduced it was believed that diphtheria would soon be practically an unknown disease. As the years have gone on, diphtheria is still with us and, although in some communities it shows a decrease in numbers and in others seems to exhibit a lessened virulence, it still remains an important public health problem.

The importance of early diagnosis has been stressed by public health officials and those connected with contagious hospitals, and statistics have shown how important this is. In a series of over 4,000 cases in Chicago, the mortality varied according to the time of diagnosis. Those recognized and treated on the first day had a mortality of only .27%, on the second day 1.67%, on the third day 3.77%, on the fourth day 11.39%, and the cases treated that had been in existence for more than four days showed a mortality of 25.37%. These figures also showed that 29% of the cases were not recognized until the fourth day or later and it is this fact that keeps the average mortality for all cases around 8%.

The introduction of the Schick test for determining immunity and the improvement in immunization by the toxin-antitoxin method have made the outlook for the future more bright. Park and Zingher have shown definitely that those susceptible to diphtheria can be rendered immune for a period of three years. This method has now been tried enough to be no longer in the experimental stage and should be more universally adopted.

The first step for the universal adoption of these important methods seems to be through the schools. Many of the cases occur in the children of school age and because of the contact in the school. This would bring home to the parents the real advantages and further education, emphasizing the desirability of protecting the pre-school child from the most serious laryngeal type of the disease, would influence the parents to have the younger children protected. Then the near future would surely show a diminution in both the incidence and the mortality of this too prevalent disease.

With winter approaching, we are facing, in addition to the usual indispositions and illnesses, the possibilities of critical conditions incidental to and

dependent upon the very probable fuel shortage. Hundreds of families have not the usual supply of coal and it is more than speculatively evident that soft coal may be the only obtainable, and under some circumstances even the availability of this may be a matter of conjecture. It is therefore wholly within the province of probability that poisoning by coal gas will become one of the important factors of conditions that will claim our attention. In the face of this likelihood, it would not be amiss to investigate more closely the conditions having to do with the combustion of bituminous coal in furnace and cook stove and have some workable ideas conveyable to the average household as to its safe utility. Not only will we be called upon to treat the result of coal gas, but we may be reasonably expected to intelligently instruct in regard to the use of the coal.

A RESUME OF THE FACE AND BROW PRESENTATIONS AT THE PROVIDENCE LYING-IN HOSPITAL FOR THE LAST TEN YEARS.

BY DR. B. H. BUXTON AND DR. S. C. WIGGIN.

Out of 9,321 cases delivered in the last 10 years, there have been 63 brow and face presentations, or 1 face or brow to 147 other presentations, or .69%.

Forty-five of these were face presentations, 1 to 207 other presentations, or .4 of 1%.

Eighteen of these were brow presentations, 1 to 517 other presentations, or .19 of 1%.

Of these 63 cases, we can only consider statistically 59, as the records of 5 of the cases are now at the binder's.

Forty, or 62% of these 59 cases, were multipara. Twenty-three, or 38% of these 59 cases, were primipara. Average age was 30 years.

Position: 19 were M. L. A., 22 R. M. A., 6 L. M. P., 12 R. M. P., 70% therefore being in the anterior position.

Length of labor: From the shortest, 2 hours 22 minutes, to the longest, 90 hours, average duration being 22 hours 24 minutes.

Thirty, or 71% of the face presentations were delivered spontaneously, 23 of these 30 being cases with the chin in the anterior position.

Twelve, or 29%, of the 42 face presentations were delivered by some operative procedure; 8 of these 12 cases being cases with the chin in the pos-

terior position. Of the 4 cases with the chin anterior, 2 were simply low forceps, and operated because of irregularity of the foetal heart, and not because of any dystocia; 1 other operated on account of toxemia, and not because of the dystocia (an easy delivery). There was only 1 chin anterior case that offered any serious difficulty.

Of the brow presentations, 5 out of the 16 delivered spontaneously, 2 of these being prematures, offering no difficulty; the others being converted spontaneously into vertex position, and delivering after a long labor. Eleven out of the 16 brow cases required operation.

Of the operative procedure: There were 4 cases in which forceps were applied to the face presentation, and the face delivered as such; 2 of these, the face being first rotated to the anterior position before the forceps were applied. There were 2 cases in which the head was flexed and head rotated to anterior position, and the patient delivered herself thereafter. There were 7 cases in which the head was flexed, and in some cases rotated, and then delivered with high forceps. There were 7 cases in which forceps were attempted and failed and some other procedure had to be adopted. There were 8 internal pedalic versions. There were 3 craniotomies.

Deaths—Maternal: There were 3 deaths; 2 died as a result of the operation and 1 died of toxemia, and in no way was due to the face presentation. The maternal mortality, as a result of the dystocia, was 3%.

Infants: There were 20 infants who died from all causes in the series of 59 cases, or 30%. A further consideration of these reveals 1 was a hydrocephalic, dead on admission, requiring craniotomy; 6 were anacephalic monsters, and were born dead, or died soon after; 3 prematures died of toxemia, leaving 10 cases who died as a result of the birth, or operative procedure, making an infant mortality of 22%.

Three of these 10 were dead as a result of interference before entrance to the hospital. If these are left out of consideration, our own hospital infant mortality would be lowered to 7 cases in 46, or 15.2%.

It is interesting to note that 6 of the cases were anacephalics, 1 a hydrocephalic and 9 were prematures.

Condition of Perineum.

There were 31 that had no new tears.

There were 8 that had first degree tears.

There were 12 that had second degree tears.

There was 1 that had third degree tear.

There was 1 that had an episiotomy performed.

Forty-one per cent therefore required some repair of the perineum.

Conclusions.

(1) The occurrence of face and brow presentations in our series compares fairly accurately with other observers.

(2) As would be expected, the occurrence is twice as common in multipara, and occurs at the average age of 30.

(3) The large majority are in the anterior position.

(4) The length of labor is decidedly increased.

(5) The large majority are delivered spontaneously if left alone, it being only the chin posterior positions which offer the difficulty in almost all the cases; this applies to the face presentations.

(6) Almost all of the brow cases required operative procedure.

(7) The operations varied from rotation and flexion of the head, with spontaneous delivery, to forceps to the face as such, to flexion of the head and application of forceps, to version and extraction, to craniotomy.

(8) The forceps are often attempted and fail, and some other procedure has to be adopted.

(9) The maternal mortality is increased. The infant mortality is markedly increased.

(10) As might be expected, is noted the large number of anacephalic monsters.

(11) There is not a greater number of torn perineum than would be expected from an equal number of operative deliveries for other causes.

VITAMIN THEORIES.

The essential experimental facts about the functions of the best known vitamins have become sufficiently familiar to justify the belief that these newly recognized food factors furnish something of importance in a human diet. Holt¹ recently summarized the service which the newer knowledge has rendered by pointing out how it has

¹ Holt, L. E.: *The Practical Application of the Results of Vitamin Studies*, J. A. M. A. 79:129 (July 8) 1922.

helped to place the whole subject of nutrition on a better scientific basis. The experimental has been substituted for the empiric method in determining the value of the different foods. Formerly we might know that certain foods were desirable and necessary; now we are often able to say why such is the case and to determine their precise value in nutrition.

The study of vitamins has helped to make clearer why a variety of foods is so essential to well being, and how danger may follow when diet becomes restricted from either necessity or caprice. Decrying the indiscriminate use of alleged vitamin-bearing preparations as popular therapeutic agents, Holt further utters the warning that until they have been confirmed by adequate clinical experience there is some danger in relying too much on the results of laboratory observations on animals of a different species whose physiologic needs may be different from those of human beings. In a somewhat similar strain, Mitchell² has asserted that in the total lack of quantitative data on the vitamin requirement of man, and in the general absence of malnutrition or disease among people in this country which can with any degree of probability be diagnosed as involving vitamin deficiencies, it seems premature to formulate recommendations for the balancing of diets with respect to vitamins. It is pointed out that the classic experiments are conducted in each instance on species peculiarly susceptible to the particular deficiency under investigation. However, this sort of criticism is a conventional one in medicine. While admitting the background of truth in it, we must recall that the clues furnished by animal experimentation have led to so many helpful avenues of information that it would be scientific folly to fail to heed them, even in our as yet inadequate understanding of the possible bearing of vitamins on human welfare. There is no necessary conflict between an open mind and conservatism in scientific judgment. Hence we are glad to reiterate the warning of Mitchell, when he writes:

"At a time when popular periodicals are widely publishing irresponsible articles on vitamins, ignorantly or deliberately creating an entirely dis-

torted popular conception of them, and when commercial concerns are widely advertising purely hypothetical advantages of vitamin preparations, it is particularly important that investigators in nutrition exert great care in the wording of statements as to the practical significance of vitamins in every day life. Otherwise they may become unwillingly accomplices in the perpetration of a gigantic fraud upon the American public."

It is in harmony with such conservatism of statement, we believe, that the recent report of the Council on Pharmacy and Chemistry of the American Medical Association on yeast preparations has been formulated.³

With so much uncertainty still admitted, it might seem futile to discuss at this time the theories of the mode of action of vitamins. However, the history of science attests that its development has more often been promoted rather than retarded by the leavening influence of hypotheses. Most investigators of the vitamins have looked on them as functioning somewhat as hormones are supposed to act in the organism, namely, as stimulants to certain physiologic mechanisms. Others have imagined the newly discovered factors to be essential components of some, at least, of the living tissues; thus they would be quite as indispensable as are other structural units of the body, such as certain amino-acid groups, calcium, phosphorus or iron. A further group of students has assumed the vitamins to be primarily catalytic in function, thus behaving like the well known enzymes. Hess⁴ of Zurich has lately offered somewhat indirect evidence that the antineuritic vitamin, which relieves the symptoms of polyneuritis in animals fed on diets devoid of vitamin B, contributes in some way to the production of oxidative enzymes in the body. Studies in vitro on the tissues of polyneuritic pigeons indicated to him a decrease in the oxidative enzymes usually found in well nourished animals. On this hypothesis the avitaminosis is an expression of poverty of the cells in the factors that facilitate tissue respiration. This is one of the many guesses which the future will need to evaluate in the physiology of vitamins. —*Jour. A. M. A.*, July 29, 1922.

² Mitchell, H. H.: The Necessity of Balancing Diets with Respect to Vitamines, *Science* 56:34 (July 14) 1922.

³ Yeast Preparations, New and Nonofficial Remedies, *J. A. M. A.* 79:135 (July 8) 1922.

⁴ Hess, W. R.: Die Rolle der Vitamine im Zellchemismus, *Ztschr. f. physiol. Chem.* 107:284 (Dec. 21) 1921.

CASE REPORTS

CITY HOSPITAL.

F. L.—Four years of age, admitted to hospital July 26, 1922, for a rash of undetermined origin. Taken sick July 25, 1922, with fever, sore throat cough and vomiting, rash appeared July 26.

On admission, temperature 105.4, pulse 160 and respiration 38. Child in coma, with twitching of muscles and purpuric rash over whole body. Pupils widely dilated, not reacting to light, with right internal strabismus. Fauces reddened, no exudate nor membrane. Neck rigid, K. J. increased, Babinski present, no Kernig sign.

Lumbar puncture done and 40 cc. milky spinal fluid removed under marked pressure. Twenty cc. antimeningitis serum given, intrathecally, 20 cc. intramuscularly, and 20 cc. intravenously. Meningococci demonstrated in spinal fluid. During the first 30 hours, antimeningitis serum was given every six hours, intrathecally and intramuscularly, and during the next thirty hours, intrathecally, then given every twelve hours until the eleventh day, when the spinal fluid became clear, and examination showed no meningococci. Patient received 300 cc. serum intrathecally, 110 cc. intramuscularly and 20 cc. intravenously. Marked opisthotonus persisted for ten days, strabismus and dilated pupils for the same period, headache and vomiting persisted for sixteen days, when the patient began to eat well and recovered rapidly, being discharged well on the 38th day.

A TYPICAL CASE OF TETANUS.

A. I.—Twelve years old, referred to hospital for tetanus. This patient on May 31, 1922, while playing in a stable received a puncture wound of the right foot. This was treated daily. Patient complained of pain in foot and leg. Eight days after the injury patient went swimming and complained of pain in back and neck, jaws became set and could open them only enough to admit tip of finger. Became irritable, developed difficulty in talking, was annoyed by bright light and noises. When disturbed, all muscles were thrown into state of contraction, remaining in spasm for several minutes, the muscles most affected being the abdominal group and the masseters, body bathed in cold perspiration, and facial expression typical risus sardonius. Tetanus antitoxin 10,000 units

given intrathecally, intramuscularly and intravenously. During the first five days received 150,000 units, when he began to improve. Trismus and stiffness of abdominal muscles persisted 12 days. Discharged well 22 days after admission.

HARMON P. B. JORDAN, M.D.

HOSPITAL NOTES

CITY HOSPITAL.

The regular meeting of the Staff Association was held on Wednesday, September 20th.

On October 1st, Dr. Frank V. Garside and Dr. John Champlin, Jr., finished their service and begin services at the R. I. Hospital.

MISCELLANEOUS

THE GORGAS MEMORIAL FUND.

At the St. Louis annual session the Board of Trustees reported to the House of Delegates that in response to a request received from the directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine for the co-operation of the American Medical Association, the Board had taken action which resulted in the appointment of a committee, representing the American Medical Association, to act on the project. The following were appointed: Dr. George E. de Schweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates unqualifiedly endorsed the Gorgas Memorial as a tribute to a past president of the organization and one of its most distinguished and loved members. At its recent meeting the Executive Committee of the Board of Trustees received the following statement from the committee and directed its publication.

STATEMENT AND APPEAL FOR CO-OPERATION.

As a result of the stimulating suggestion of President Porras of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas, and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the people of the whole world, especially in tropical and semi-tropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our surgeon general during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Braisted, retired, ex-president of the American Medical Association, as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation, for the purpose of training country health workers, sanitary engineers and public health nurses, especially educated to deal

with the problems peculiar to the southern States.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed.

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former president, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his co-workers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully received. Checks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

CHARLES W. RICHARDSON,

Washington, D. C.

F. B. LUND, Boston.

G. E. DE SCHWEINTZ, Philadelphia.

PROVISIONAL MORTALITY FIGURES, 1922.

Washington, D. C., August 30, 1922.—The Department of Commerce announces that provisional mortality figures compiled by the Bureau of Census for the first quarter of 1922 indicate higher death rates than for the corresponding quarter of 1921. For the States compared, the death rate for the first quarter was 13.7 in 1922 against 12.6 for the first quarter of 1921. The highest mortality rate for the quarter is shown for the District of Columbia (17.6) and the lowest for Wyoming (9.6). These early figures forecast for the year 1922 a higher rate for the death registration area than the record low rate (11.7) for the year 1921.